Listing of Claims:

Claims 1-3 (Cancelled)

Claim 4 (currently amended) A method of ~~highly~~ sensitive, qualitative and quantitative analysis of radionuclides in a sample by multiple gamma-ray detection, which comprises:

providing a sample comprising radionuclides;

detecting simultaneously a pair of gamma-rays emitted concurrently from each of the radionuclides in the sample with a multiple gamma-ray detector assembly comprising a plurality of gamma-ray detectors to determine energies of each of the concurrent pairs of gamma-rays;

constructing a two-dimensional matrix having two axes by plotting the energy of one gamma-ray of the concurrent pair of gamma-rays on one of the two axes and the energy of the other gamma-ray on the other axis and making a peak for each radionuclide on an axis vertical to the two axes by plotting count (intensity) of each gamma-ray at each position plotted on the matrix;

specifying each radionuclide from the position of the peak on the matrix by referring to known data of gamma-rays emitted from each radionuclide;

comparing the peak for each radionuclide with a standard radiation source having known energy and intensity to measure the content of each radionuclide in the sample.

Claim 5 (currently amended) The method according to claim 4, wherein the ~~radionuclides are~~ sample is radioactivated with neutrons or gamma-rays.